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FOREIGN AGRICULTURE REPORT

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THE POSITION OF AMERICAN COTTON IN SWEDEN

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by

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This report is based on a personal survey made by Mr. Taylor, formerly United States Agricultural Commissioner, American Embassy, London, England.

SUMMARY

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According to the latest official census (1944), there are about 555 thousand spindles in Sweden, including 411 thousand on cotton and 144 thousand on rayon staple fiber. Looms reported in 1944 totaled 13,547 of which 7,908 were automatic.

Cotton consumption in September 1947 was at the rate of about 120,000 bales annually. The hope was then to reach a consumption rate of 147,000 bales by June 1948 with American cotton comprising nearly one-half of all cotton consumed. Prewar consumption was nearly 140,000 bales. Shortage of dollar exchange and the relatively high price of American cotton may limit the volume of American cotton imports.

The United States supplied about 90 percent of total Swedish cotton imports until 1941. Since then, Brazil has been the chief supplier of raw cotton. The relative volume of American cotton imported showed a slight recovery, however, in the first 8 months of 1947.

During the war, prices were definitely in favor of Brazilian cotton. Recent comparative prices show Brazilian to be about 2.5 cents per pound below American cotton of equivalent qualities. The chief demand seems to be for Middling to Strict Middling grades and from 7/8 to 1 inch in staple length. This is because the output is largely in yarn counts up to 30s with the average count about 20s.

While there is very little change in the number of spindles and looms in Sweden, output is estimated at about 70 to 75 percent of potential production. This is reportedly due to the shortage of trained labor and to the lack of spare parts, replacements, and general supplies.

Swedish textile machinery is almost entirely of foreign manufacture--American, British, Swiss, German, etc. It is difficult therefore to get prompt delivery of replacements, equipment, or spare parts. Incomplete or insufficient supplies of starch for sizing the warp yarn and shortage of card clothing, belting, and similar important items have also slowed down production.

Fuel has been another of the major difficulties in Sweden. Adequate supplies would result in increased textile output.

Transportation is adequate, Gothenburg being the chief maritime port. Most of the mills are located in southern Sweden.

Even before the war, Sweden had begun to develop its synthetic-fiber industry. The 1938 total production of staple fiber and filament yarn was 3.5 million pounds but had reached 32.4 million pounds by 1946. Staple-fiber production in 1938 was 1.9 million and had reached 29 million pounds in 1946. Filament yarn production in 1938 was 1.6 million and in 1946 reached 3.4 million pounds. Indigenous supplies of wood-pulp, plus the current high prices of cotton, undoubtedly encouraged a continued large volume of staple-fiber output. Further expansion is also contemplated, both in staple fiber and filament yarn.

SPINNING AND WEAVING CAPACITY

Spinning

According to the Swedish Textile Council, there was little change during the war in the spinning capacity of cotton mills in Sweden. In the 1939 report of the International Federation of Master Cotton Spinners, this was stated to be 561,000 spindles. Table 1 lists the latest (1944) Swedish census of spinning and twisting capacity.

Table 1. Census of spinning and twisting capacity in Sweden, 1944

Fiber	Spinning spindles 1/	Twisting Spindles
	Number	Number
Cotton	411,202	70,432
Staple fiber	143,670	18,437
Filament yarn	-	3,300
Total	554,872	92,169

1/ Equivalent ring spindles.

Of the equivalent of 554,872 spinning spindles reported, 143,670, or 26.1 percent, were shown to be processing rayon staple fiber. The filament yarn does not utilize any of the yarn-spinning capacity. (See section on synthetics). Present spinning frames are being changed over to high-draft spinning and about 70 percent have been so modernized.

The twisting spindles listed in table 1, do not add to the cotton-consuming capacity. They are used chiefly for twisting together two or more strands of the single yarn of cotton or rayon.

At present, Sweden is operating at approximately the prewar level of a single shift of 48 hours per week, plus about one-third of a second shift. On 20s yarn, 48 hours of operation per week should yield about 80 pounds of yarn per spindle per year. Present reported output of 50 kilos (110 pounds) per year indicates about 1-1/3 shifts. There appears to be a possibility of increased production when labor, spare parts, and other supplies become normal.

Swedish mills are now running from 8s to 30s yarn and averaging about 20s yarn. The resultant coarse- to medium-quality goods are largely intended for domestic consumption, and better qualities are imported.

For these relatively coarse yarns and fabrics, it is reported that Middling to Strict Middling grades and 7/8- to 1-inch staple lengths are required.

A very strong desire to increase the spindle capacity in Sweden is indicated, but this may have to wait until new equipment is available from abroad, since Sweden has almost no textile-machinery production.

Weaving

The number of looms in place is reported to be approximately equal to that included in the census of 1944, which listed a total of 13,457. At that time, about 58 percent of all looms in place were automatic. Since then, there has been a material replacement of nonautomatic equipment so that current estimates place the proportion of automatic-type looms at approximately 70 percent of the total. Based on present modernization plans, it is expected that 90 percent of all looms will be automatic within 2 years. Loom capacity at present exceeds domestic spinning capacity by about 25 percent. Loom output is at present reported to be of ordinary, average quality to meet essential internal requirements. Fabric of special constructions or finer quality fabrics were normally imported. A tabulation showing the number of looms in place, by types of looms, as listed in the census of 1944 is provided in table 2.

Table 2. Census of looms in Sweden, by types, 1944

Fiber	Nonautomatic 1/		Automatic 1/		Total
	Without drop box	With drop box	Without drop box	With drop box	
	Number	Number	Number	Number	Number
Cotton	1,117	942	4,561	590	7,210
Staple fiber	385	1,476	1,682	236	3,779
Filament	459	1,260	654	185	2,558
Total	1,961	3,678	6,897	1,011	13,547

1/ Looms without "drop boxes" are simply looms using only one shuttle and one count of yarn. Looms with "drop boxes" can use more than one shuttle and therefore can use yarns of different quality, count, or color, i.e., for stripes or ginghams, etc.

COTTON CONSUMPTION

Average cotton consumption in Sweden during September and October 1947 ranged between 9,200 and 10,120 bales of cotton per month, according to the Stockholm Textile Council. This is equivalent to a maximum consumption rate of about 121,440 bales annually. The Council anticipates further increases in cotton consumption and expects that the industry will attain an annual consumption rate of 147,200 bales by June 1948. It estimates that about 69,000 bales, or approximately 47 percent of this quantity, may be American cotton.

These consumption estimates compare with average cotton consumption prior to the war of about 138,000 bales per year. Of the total quantity then consumed, about 86 percent was supplied by the United States, and about 6 percent originated in Egypt (table 3). At present, the chief demand for cotton fiber appears to be for Middling to Strict Middling grades, measuring from 7/8 to 1 inch in staple length. This is because output is largely confined to yarn counts up to 30s, with the average count reported as about 20s yarn.

Table 3. Consumption of raw cotton in Sweden during designated prewar periods, by countries of origin

/Thousands of running bales/

Country of origin	Six-month period ending			
	Jan. 31, 1939	July 31, 1938	Jan. 31, 1938	Jan. 31, 1937
United States	66	48	53	65
India	-	-	1	1
Egypt	4	5	4	3
Other	7	3	5	3
Total	77	56	63	72
	Percent	Percent	Percent	Percent
Percentage from United States	86	86	84	90

Source: International Federation of Master Cotton Spinners.

FOREIGN TRADE

Raw Cotton

Swedish imports of raw cotton attained a total of 216,200 bales as a consequence of war threats during 1939 and dropped to a low of 55,200 bales in 1945.

Up to 1941, purchases of American cotton dominated the Swedish market. Beginning with 1942, however, Brazil superseded the United States as the principal supplier of raw cotton. This radical change in source of cotton imports may have been due to a number of factors such as: The relatively high price of American cotton; exchange or currency difficulties; shipping problems; and other factors brought about by, or resulting from, war conditions.

Until the middle of 1946 Sweden's dollar balances were in a relatively strong position. The steady decline that has since occurred in these balances has resulted from several factors, important among which were the appreciation of the Swedish krona in the summer of 1946, Swedish imports from dollar areas in 1946 and 1947 far in excess of normal prewar volume, and the failure in the summer of 1947 in the effort of the United Kingdom to maintain convertibility of the pound sterling.

Quota restrictions on most important United States imports did not stop the growing Swedish exchange crisis. The quotas were originally intended to run until June 1948, but those for cotton and many industrial products were filled before the end of 1947. Swedish reserves of gold and hard currency declined from over 300 to 107 million dollars during the year. The balance was insufficient to meet payments due in the first quarter of 1948. A program of delayed payments on import-exchange permits issued during 1948 has now been adopted. The issuance of permits is being determined by the Swedish Government almost exclusively on the basis of estimates of essentiality. Sweden's exchange difficulties will be the subject of negotiations between the Swedish and United States Governments in June 1948 on the basis of the balance-of-payment provisions of the Geneva General Agreement on Tariffs and Trade and of the Habana Charter of an International Trade Organization.

Despite exchange difficulty, recent developments have pointed to some recovery in the relative volume of cotton imported from the United States, but with Brazil still continuing as the principal supplier. A summary of raw-cotton imports, by sources, since 1938 is provided in table 4.

Table 4. Imports of raw cotton into Sweden, by country of origin, 1938-47

Year	Countries of origin				
	United States	Egypt	Brazil	Other	Total
	Bales	Bales	Bales	Bales	Bales
1938	143,414	13,216	6,021	5,005	167,656
1939	180,150	17,765	11,656	6,293	215,864
1940	86,627	4,039	363	1,241	92,280
1941	71,581	-	3,330	497	75,268
1942	10,815	1,366	132,241	2,967	147,389
1943	-	-	78,885	4,683	83,568
1944	4,756	-	152,472	2,300	159,528
1945	846	248	36,690	17,572	55,356
1946	7,921	5,548	52,780	19,904	86,153
1947(8 mos.)	17,406	2,415	23,446	8,271	51,538
	Percent	Percent	Percent	Percent	Percent
1938	85.5	7.9	3.6	3.0	100
1939	83.5	8.2	5.4	2.9	100
1940	93.8	4.4	0.4	1.4	100
1941	95.0	-	4.4	0.6	100
1942	7.3	0.9	89.8	2.0	100
1943	-	-	94.5	5.5	100
1944	2.9	-	95.7	1.4	100
1945	1.5	0.5	66.2	31.8	100
1946	9.2	6.4	61.3	23.1	100
1947(8 mos.)	33.8	4.7	45.5	16.0	100

Source: Swedish Textile Council.

A tabulation summarizing Sweden's imports, exports, and net imports of raw cotton from 1938 to 1947 and listing also domestic cotton consumption is provided in table 5.

Table 5. Imports, exports, and consumption of cotton in Sweden, 1938-47

Year	Imports	Exports 1/	Net imports	Consumption (domestic)
	Bales	Bales	Bales	Bales
1938	167,656	92	167,564	132,715
1939	215,864	202	215,662	140,544
1940	92,280	-	92,280	175,714
1941	75,268	-	75,268	95,772
1942	147,389	46	147,343	84,925
1943	83,568	340	83,228	76,107
1944	159,528	6,826	152,702	16,116
1945	55,356	30,507	24,849	-
1946	86,153	19,495	66,658	-
1947 (8 mos.)	51,538	-	-	-

1/ Represents cotton supplied direct from Sweden to other countries against processing contracts.

Yarn and Cloth

Swedish weaving capacity is reported as 25 percent greater than that of spinning. Consequently, it has been customary to import substantial quantities of yarn for weaving, hosiery, and knitting.

Yarn imports (1936-38) averaged about 700,000 pounds per month and the average cost was 4.97 kroner per kilo. For the first 6 months of 1947 yarn imports were 6.5 million pounds at an average cost of 8.75 kroner per kilo (2.2 pounds).

In addition to yarn, Sweden also imported considerable quantities of cloth. Some of this was the ordinary "bread and butter" qualities for domestic use, similar to the qualities now being produced in Sweden. Since Sweden is not generally equipped to produce the finer yarns and fabrics, such qualities were imported from such countries as England, Germany, Italy, Switzerland, etc.

Prior to the war, domestic production of fabrics accounted for about three-fourths to four-fifths of the total fabric supply. During the war years, the available supply of cotton fabrics was reduced substantially with the relative portion imported from other countries likewise reduced. Thus, imports of cloth dropped from 7,286 metric tons in 1939 down to 188 metric tons in 1944. Substantial recovery in the volume of cloth imports is noted for the period beginning 1945, with imports during the first 8 months of 1947 exceeding those of the calendar year 1939 by 45 percent. Total imports of cloth, by years, beginning 1938, together with data showing production, exports, and net supply of cloth are given in table 6.

Table 6. Production, imports, exports, and supply of cotton cloth in Sweden, 1938-47

Year	Production 1/	Imports 2/	Exports	Supply 3/
	Metric tons	Metric tons	Metric tons	Metric tons
1938	19,874	5,490	717	24,674
1939	20,161	7,286	688	26,759
1940	20,698	4,643	250	25,091
1941	14,442	2,888	1	17,309
1942	14,726	1,152	-	15,878
1943	13,672	656	7	14,321
1944	13,552	188	1	13,739
1945	4/ 15,500	1,147	402	4/ 16,200
1946	4/ 16,000	6,503	172	4/ 22,300
1947 (8 mos.)		10,530	12	

1/ Sveriges Officiella Statistik - Industri, 1938-44
2/ Sveriges Officiella Statistik - Handel, 1938-45
3/ The total supply of cotton cloth includes substantial admixtures of staple fiber or filament rayon yarn with cotton. It has been impossible to obtain separate figures on cotton- and rayon-cloth mixtures. It would therefore be difficult to check the above tonnages of cloth with tonnages of imported raw cotton.
4/ Preliminary

Listed in appendix A are the quantities and value of cotton cloth imported into Sweden, by country of origin, for the period 1938 to 1947.

STOCKS

Raw-cotton stocks on hand in Sweden at specified periods prior to the war are listed in table 7, with a break-down by country of origin. According to these figures, cotton stocks varied from 24,000 to 37,000 running bales. On the basis of prewar consumption during the same periods (table 3), stocks were approximately equal to 3 months' consumption requirements.

Table 7. Raw cotton stocks in Sweden, designated prewar periods, by countries of origin.

/In 1,000 running bales/

Country of origin	Stock position as of			
	Jan. 31,1939	July 31,1938	Jan. 31,1938	Jan. 31,1937
United States	29	23	33	21
India	-	-	-	-
Egypt	3	4	2	2
Other	5	4	2	1
Total	37	31	37	24
Average consumption during preceding 6 months	12.8	9.3	10.5	12.0
No. months supply	2.9	3.3	3.5	2.0

Stock figures are not available for the war period. Such data are not considered important, however, since cotton was obtained whenever and wherever possible without regard to the stock position.

Estimated cotton stocks as of August 1, 1947, were placed at 78,200 bales. Assuming consumption at an average rate of 119,600 bales annually, such stocks were equal to a 7.8-month supply.

Detailed statistics on the present stock position of cotton in Sweden, with break-downs by countries of origin, are not available. Assuming that total supply, consumption, and distribution of the various kinds of cotton coincide with quantities imported, it is possible to calculate roughly the respective quantities which might be found in the supply and distribution totals (table 6).

Table 8. Supply and distribution of cotton in Sweden, year ending August 1, 1947.

	United States	Brazil	Other So. American	Egypt	Other	Total
Supply	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales
Stocks Aug. 1,1946	5.52	70.84	18.40	5.52	10.12	110.40
Imports	18.86	47.38	12.42	5.06	4.60	88.32
Total Supply	24.38	118.22	30.82	10.58	14.72	198.72
Distribution						
Consumption	14.26	72.22	18.86	6.44	8.74	120.52
Stocks Aug.1,1947	16.56	41.40	12.42	4.14	3.68	78.20
Total Distribution	30.82	113.62	31.28	10.58	12.42	198.72

PRICE

As has been noted above, the United States has been superseded by Brazil as the principal supplier of raw cotton to Sweden. The emergence of Brazil as Sweden's main source of cotton fiber dates back to 1942. Undoubtedly, the high price of American cotton in relation to that of cotton from Brazil has been an important factor in bringing about this shift. On the basis of Government import statistics, the average annual prices paid for American cotton during 1938 and 1939 were rather closely in line with prices paid for cotton originating in Brazil (table 9). During 1940 and 1941, the cost of American cotton rose considerably in comparison with the cost of Brazilian cotton. Despite this increased cost, the proportion of cotton imported from the United States continued high. From 1942 to 1944, however, Brazilian prices were substantially lower than American. Thus, though there was a strong preference for the spinning quality of American cotton, the price differentials in 1942-44 made it impracticable for Swedish mills to purchase their fiber from the United States.

The relative prices (table 9) were obtained from the Textile Bureau of the Swedish Government. Unfortunately they were not able to supply figures beyond 1945. However, in September 1947, they stated that there was an average difference in cost of 2.5 cents per pound in favor of Brazilian cotton over American cotton of equivalent qualities.

Table 9. Average annual prices paid for cotton imported into Sweden, by country of origin, 1938-45

Year	United States	Egypt	Brazil	Other
	Cents per lb.	Cents per lb.	Cents per lb.	Cents per lb.
1938	11.54	15.00	11.87	12.12
1939	12.14	15.17	11.50	11.06
1940	13.94	19.97	8.75	13.29
1941	22.08	-	17.59	17.67
1942	30.36	57.21	18.76	30.27
1943	-	-	19.23	34.81
1944	33.93	-	21.28	33.42
1945	28.08	47.14	24.32	25.07

PROCESSING CONTRACTS

To increase the domestic supply of yarn and cloth, Sweden has been compelled to enter into commission, processing, or other contractual agreements with other countries. During the war, blending of cotton with staple fiber also helped to conserve war-emergency stocks of cotton.

Imports of cotton yarn in 1947 were greatly increased as a result of processing contracts with several other European countries for Swedish account against payment in raw cotton. According to reports, some of the cotton bought by Swedish mills for commission spinning in other countries did not enter any Swedish ports but was shipped from abroad direct to the foreign spinner. Therefore, these quantities have not been entered into the Swedish import statistics.

It is reported that the consumption of imported cotton yarns in 1945, 1946, and 1947 increased very greatly in the weaving, knitting, and hosiery industries.

Statistics showing cotton exports by Sweden (table 5) represent the quantities of cotton supplied direct from Sweden to other countries against processing contracts. They indicate substantial reduction in 1946 from 1945.

It is intimated that the gradual increase in domestic production, plus the difficulties of foreign exchange, will probably discourage and reduce interest in further processing contracts.

LABOR

The labor situation in Sweden is somewhat complicated and rather difficult to appraise at the present time. A serious shortage is reported in both the spinning and weaving sections. The situation in the weaving section was eased somewhat by the importation of automatic looms in 1946 and 1947. These require fewer weavers.

Wages in the cotton-textile mills in all countries have nearly always been the lowest in any major industry. As a result, other industries paying higher wage scales have attracted the better workers, and the textile trade has found it difficult to compete against these higher wage levels. This condition was more in evidence during the war.

This labor condition has contributed very materially to the reduced output which has taken place in the last few years, and full recovery must wait until labor and other postwar problems have been solved.

MACHINERY

Sweden does not possess any plants capable of producing textile machinery. Since its equipment is of foreign manufacture, Sweden has had to depend on other countries for spare parts and new machinery. Consequently, the replacement and re-equipment of the mills have been delayed. Starch, belting, card clothing, bobbins, paper cones, and tubes are some of the difficult items which hamper production.

The machinery and the labor situations are largely responsible for the reduced output. The prewar normal output was about 56 million pounds of cotton yarn and 2.5 million pounds of staple fiber, a total of 58.5 million pounds. The 1946 output was about 48 million pounds of cotton yarn and 7 million pounds of staple fiber, or a total of 55 million pounds. The labor and machinery and problems must be solved before full capacity can be realized.

There are no statistics on the actual composition of the textile machinery used in Sweden. Large machinery orders have been placed since the German surrender, but few deliveries have been made. While some machinery came from Germany and Switzerland during the war, Sweden was totally cut off from the United States and the United Kingdom.

FUEL AND POWER

During the war and since, Sweden has had great difficulties in obtaining sufficient supplies of coal or other fuel. The most important sources of supply should have been the United Kingdom and Poland, but adequate supplies from these have not materialized, although some coal has come from the United States. The Swedish mills have been obliged to use peat, charcoal, and wood as fuel.

Consumption of these various substitutes in 1944 was equivalent in heat units to 250,000 tons of coal. In the meantime, some mills have installed oil heaters.

The consumption of electrical energy in 1944 by the textile and clothing industry was about 235 million K.W.H. However, because of the dry weather in the summer and autumn, the electric-power supply was cut down to about 85 percent in 1946. This caused a very serious reduction in textile production at the time.

TRANSPORTATION

There has been no substantial damage to the transportation system of Sweden, although it is under some pressure. Cotton is shipped mainly to Gothenburg and to several other ports and thence by rail to the mills. The majority of the mills are in southern Sweden.

SYNTHETICS

Staple Fiber

The development of synthetic-fiber (rayon) production in Sweden has apparently been based on a definite policy aiming at maximum self-sufficiency. This policy seems to have been decided upon even before the war, but wartime restrictions forced a positive program, and the internal economy of Sweden undoubtedly stimulated efforts to obtain a supply of substitute fibers which would lessen the nation's dependence on raw-cotton imports.

Statistics showing the distribution of staple fiber (table 10) clearly illustrate the transition from substantial imports to a position where domestic production not only meets domestic needs but also provides ample exports as well.

Table 10. Rayon staple-fiber production, imports, exports, and net supply, of Sweden, 1938-46

Year	Production	Imports	Total	Exports	Supply	Production of staple-fiber yarn
	Million lbs.	Million lbs.	Million lbs.	Million lbs.	Million lbs.	Million lbs.
1938	1.9	1.2	3.1	.05	3.05	-
1939	2.1	3.8	5.9	.1	5.8	2.84
1940	2.5	6.3	8.8	-	8.8	4.16
1941	7.8	12.5	20.3	-	20.3	7.8
1942	14.3	14.0	28.3	.07	28.23	11.14
1943	22.3	12.4	34.7	.34	34.36	12.6
1944	29.9	3.2	33.1	6.6	26.5	13.4
1945	1/26.5	.5	27.0	5.1	21.9	7.6
1946	1/29.0	.07	29.07	17.4	11.67	7.6

1/ Production figures for 1945 and 1946 were taken from Rayon Organon. All other figures were obtained from the Swedish Industrial Commission.

Staple-fiber production increased steadily from nearly 2 million pounds in 1938 to 29 million pounds in 1946. The increase in staple-fiber-production capacity was achieved by enlarging existing rayon factories and by the construction of a new staple-fiber factory, which is owned jointly by the Swedish textile industry and the consumers co-operative association on a 50/50 basis.

Imports of staple fiber reached 14 million pounds in 1942 but have now almost ceased. Production of yarn varied during 1938-46 (last column in table 10). It was also reported that considerable quantities of staple fiber were being mixed with both cotton and wool.

Sweden experienced considerable difficulty during the war in obtaining supplies of cotton, and apparently this stimulated more interest in increasing the production of synthetic fiber. The country also has ample forest areas from which a high quality of wood-pulp cellulose is obtained. Sweden is also a large exporter of rayon wood pulp.

The increase in staple-fiber production has a very significant bearing on cotton consumption. Certain percentages of this staple fiber are cut into fiber lengths similar to cotton fibers. Such fiber must be processed on standard cotton machinery, thereby displacing a similar quantity of cotton.

Staple fiber is being mixed with wool. In this case the staple fiber is cut into lengths similar to those of the wool with which it is to be mixed or blended.

Staple fiber can therefore be cut and blended with appropriate fiber lengths of cotton or wool. It can also be processed separately, and the resultant product is referred to technically as spun-rayon yarn.

It appears sound for Sweden to maintain the production of a substantial volume of staple fiber. With available domestic supplies of wood-pulp, there is less demand for foreign exchange than would be necessary if equivalent quantities of Brazilian or American cotton or Australian wool were purchased. Before the war, this same policy had been developed rather substantially by Germany, Italy, and Japan, and for similar reasons.

While no official figures on 1947 production are available, it is reported that capacity and production equaled those of 1946.

High cotton prices have favored the continued high production of staple fiber.

Filament Yarn

Rayon filament yarn is in the same general category of synthetic fiber as staple fiber. Its manufacture is very similar to that of staple fiber as to the wood-pulp, chemicals, and general processing. However, while staple fiber is cut into specified lengths, filament yarn is produced in continuous lengths similar to those of natural silk.

Figures showing the development of filament yarn (table 11), indicate a doubling in the volume of production since 1938, despite an increase in imports.

Table 11. Production, imports, exports, and net supply of rayon filament yarn in Sweden, 1938-46

Year	Production	Imports	Total	Exports	Net Supply
	Million lbs.	Million lbs.	Million lbs.	Million lbs.	Million lbs.
1938	1.6	3.6	5.2	.1	5.1
1939	1.9	5.3	7.2	.04	7.16
1940	1.8	4.2	6.0	-	6.0
1941	2.0	5.7	7.7	-	7.7
1942	2.5	6.4	8.9	-	8.9
1943	2.5	6.7	9.2	-	9.2
1944	2.5	6.6	9.1	-	9.1
1945	3.0	3.0	6.0	-	6.0
1946	3.4	5.1	8.5	.02	8.48

Source - Swedish Textile Commission.

As previously stated, staple fiber is cut into appropriate lengths. In this condition it may be either mixed or blended with cotton or wool or processed separately. Up to certain limits, therefore, staple fiber is an active competitor with raw cotton. On the other hand, rayon-filament yarn is less competitive directly with raw cotton. Being in a continuous length and in the form of a thread, it is ready for weaving, twisting, or other uses and therefore does not compete for the use of standard cotton-spinning equipment.

The same company now building the new staple-fiber plant is also building another filament-rayon factory, which will double the present capacity of filament yarn. This latter plant will operate under a patented process originally created by the Industrial Rayon Company of America. It is operated on the "basis of a continuous spinning process." The viscose process is the only system used in Sweden for the production of rayon filament yarns.

Filament yarn is frequently used in conjunction with cotton yarn. It may be used either as warp or filling, or for stripes, depending upon the effect required. A cotton warp with a rayon-filament-yarn filling, or vice versa, is common mill practice. It was also used during the war as a substitute for cotton yarns and fine worsted yarns.

Considering the relatively high price of cotton, the disturbed condition of international trade, the difficulties of foreign exchange, an indigenous supply of high-grade wood pulp, and other factors, there would seem to be rather compelling reasons for Sweden to foster and maintain a strong synthetic-fiber industry, both in staple-fiber and filament-yarn production.

Sweden is able to provide all its rayon factories with wood pulp, but there are some difficulties in obtaining those chemical ingredients necessary for the production of rayon.

Appendix A

Sweden: Quantity and value of cotton cloth imported, 1938-47

Country of Origin	1938		1939		1940		1941		1942	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	M. tons	1000 kr.	M. tons	1000 kr.	M. tons	1000 kr.	M. tons	1000 kr.	M. tons	1000 kr.
United States	61	135	534	1,390	541	2,031	564	2,777	236	1,743
Japan	1,461	2,983	1,754	4,103	1,653	4,586	1,307	2,587	601	2,421
Gt. Britain	2,074	13,731	3,156	16,216	1,021	6,687	167	1,770	24	334
Germany	261	2,126	426	3,478	219	2,344	202	3,382	30	725
Italy	264	1,634	596	2,650	512	3,170	343	4,998	36	772
Switzerland	99	1,141	196	1,984	139	1,972	210	4,422	130	4,755
Argentina	-	-	-	-	-	-	-	-	32	225
Brazil	-	-	-	-	-	-	-	-	30	190
All others	1,270	6,693	624	5,703	558	3,249	95	972	33	406
Total	5,490	28,443	7,286	35,524	4,643	24,039	2,888	20,908	1,152	11,571

	1943		1944		1945		1946		1947 (8 mos.)	
United States	102	767	54	273	409	2,339				
Japan	127	416	18	136	-	-				
Gt. Britain	20	262	1	3	7	132				
Germany	9	207	2	36	-	-				
Italy	18	649	1	7	1	4				
Switzerland	12	536	55	2,523	16	832				
Argentina	256	1,637	22	158	93	529				
Brazil	50	363	30	242	5	38				
All others	62	1,969	5	201	616	3,231				
Total	656	6,806	188	3,579	1,147	7,105	6,503		10,530	